

National Information Exchange Model Maritime (NIEM-M)

Artifact Versioning Plan

November 3, 2014

Version 1.0

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Change Log

Version	Date	Author	Change
1.0	November 3, 2014	DESC	Original Version
1.1	November 7, 2014	MDA - Davis	Original Version

1. Introduction

The NIEM-M Artifact Versioning Plan documents versioning within the maritime domain to inform stakeholders about what tools will be used, and how they are applied to promote successful management of the evolution of the NIEM-M both for the maritime community, and in conjunction with the NIEM community as a whole.

The Versioning Plan is a living document that will continue to change as the NIEM Maritime community grows.

1.1 Purpose

The purpose of the NIEM-M Versioning Plan is to ensure the integrity of the domain products by institutionalizing defined and managed versioning processes. It summarizes the management and versioning of artifacts associated with the Maritime Domain.

Versioning will:

- Document the context and environment for the various types of NIEM-M products and documents
- Define the methods and level of emphasis to be applied to all NIEM-M releases
- Embed guidelines and procedures as part of the business rules for the tools used in NIEM-M development and operation
- Ensure alignment of the NIEM-M and associated artifacts with NIEM releases

1.2 Artifact Identification and Accounting

NIEM-M is and will continue to be an evolving set of products, including the Maritime Domain Model, Enterprise Information Exchange Model (EIEM)/ Basic Information Exchange Components (BIECs), Information Exchange Package Documentation (IEPDs), and associated documentation. As the number of NIEM-M artifacts increases, it is important to identify NIEM-M artifacts with a consistent identification and accounting protocol and to maintain the correct associations between the versions of the artifacts in the domain repository and the supporting documentation on the community website (<https://mise.mda.gov>).

NIEM-M identification and accounting guidelines address:

- Providing date, version, and revision identifiers when the configuration changes
- Assigning release package (baseline) identification to the artifacts associated with each release
- Systematically maintaining baselines that provide the known state from which future changes are to be addressed, while retaining prior configuration baselines related to prior operational implementation
- Providing access to NIEM-M metadata and artifacts in re-use libraries and repositories, ensuring that the correct versions of artifacts for the intended use are made available to the maritime community

1.3 Roles & Responsibilities

The successful versioning of NIEM-M artifacts is the responsibility of various stakeholders. Table 1 (below) identifies these stakeholders and the associated role and responsibilities.

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Organization	Role	Responsibilities
Maritime Domain NIEM – M Steward (DOD EA MDA)	Designated lead for NIEM-M and oversees execution of domain functions	<ol style="list-style-type: none"> 1) Provide domain stewardship and support for domain models 2) Participate in domain harmonization activities as required by the NBAC 3) Ensure active Maritime participation in the NBAC 4) Support domain reconciliation and cross-domain harmonization for future NIEM releases, as needed 5) Facilitate development of use cases, scenario planning and requirements for NIEM-M content addition Provide ongoing identification of data requirements based on exchange/data modeling and development efforts 6) Integrate MDA priorities into the NIEM-M work plan 7) Review and recommend NIEM Core content changes on behalf of domain stakeholders 8) Ensure adequacy of training resources for Domain Users 9) Facilitate development of use cases, scenario planning and requirements for NIEM-M content addition 10) Update domain Artifacts (eg. charter, operations & Maintenance Plan) 11) Perform all functions necessary to manage the maritime data model and support NIEM in Architecture in accordance with the NIEM High Level Architecture
Domain Management (DESC)	Performs day-to-day management functions and versioning of content. Promotes reuse of information exchange artifacts	<ol style="list-style-type: none"> 1) Implement NIEM-M content in accordance with Domain Steward direction, NIEM guidance, and community requirements 2) Provide regular updates to the Domain Steward on domain activities 3) Provide recommendations for NIEM Core content changes on behalf of domain stakeholders 4) Provide technical (help-desk) support for support for domain-specific issues related to NIEM and NIEM conformant information exchange development to assist implementers and developers 5) Participate on the behalf of the stakeholders in NIEM events, training and initiatives 6) Maintain the public NIEM-M web presence on NIEM.gov site 7) Identify harmonization opportunities, both internal and external to the NIEM-M and participate in harmonization and reconciliation activities 8) Promote reuse and visibility of artifacts that leverage NIEM-M 9) Ensures domain content is aligned with NIEM High-Level Version Architecture, NIEM Naming and Design Rules (NDR), and other documentation, as appropriate
Community Users	Maritime Community of Interest (COI)	<ol style="list-style-type: none"> 1) Use updated Maritime model 2) Verify EDEM changes and provide feedback as identified 3) Develop and maintain NIEM-M IEPDs 4) Verify EDEM changes and provide feedback as identified 5) Develop & maintain NIEM-M IEPDs

Table 1. Roles & Responsibilities

2. Activities

There are three major activities requiring the versioning of NIEM-M artifacts, domain updates, EDEM and IEPD updates, and documentation updates. These are the processes in which the Domain Steward, Domain Management Team, and maritime community are engaged as they improve and expand NIEM-M.

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2.1 Domain Update

Maritime Domain Model releases coincide with NIEM releases following the procedures for major releases, minor releases, and domain updates in accordance with the NIEM versioning ~~architecture~~architecture. More information on NIEM versioning can be found on the NIEM website at <http://niem.gov>.

2.2 EIEM and IEPD Update

The Maritime EIEM and IEPD packages are managed separately from the Maritime Domain Model, and use the following commonly accepted versioning system to track changes.

2.2.1 Versioning Scheme

The semantics for the version parts are defined as:

1. **MAJOR** (i.e. 3.2 to 4.0) – Version release for significant changes to logical structure or XML design, i.e.:
 - Upgrade to new NIEM major release
 - Moving to EIEM/BIECs
 - Removing key elements or BIECs
2. **MINOR** (i.e. 4.0 to 4.1)– Version is for updating or enhancing model without significant structural changes, i.e.:
 - Adding a new element to a BIEC
 - Modifying an element in an IEPD
3. **MICRO** (i.e. 4.1 to 4.1.1) – Version for additive changes done in a backwards-compatible manner, i.e.:
 - Adding a fixed code list

2.2.2 Versioning Scenarios

Due to inheritance of the models, changes can trickle down to each artifact. Various artifact versioning scenarios are captured below in Figure 1.

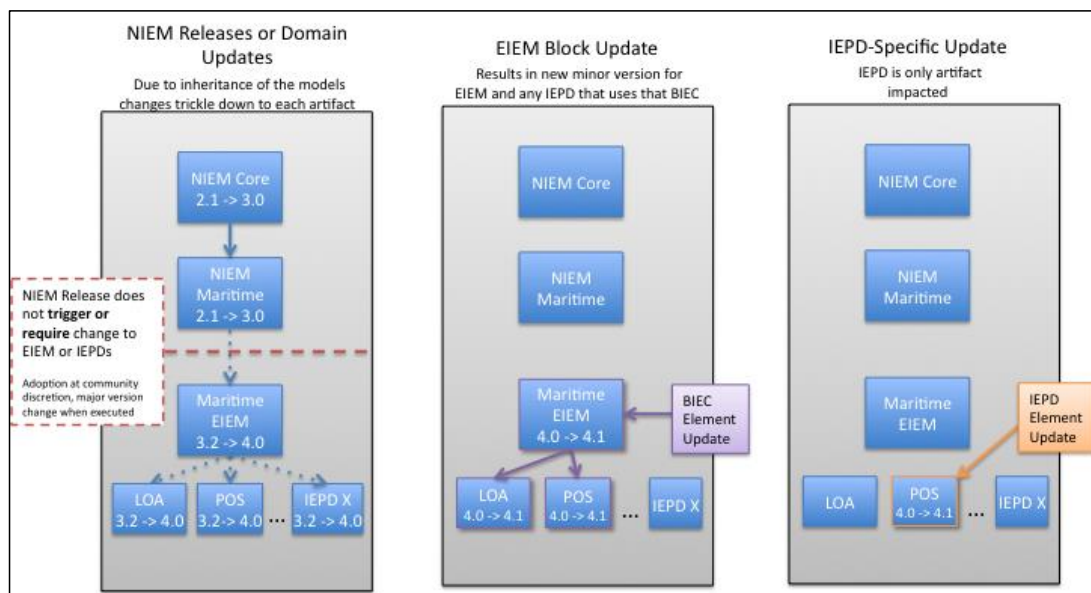


Figure 1. Artifact Versioning

2.3 Documentation Update

There are various types of documents associated with the NIEM-M models. Each document is updated as necessary to align with the latest implemented domain models. Documents are versioned with the same version information of the associated Maritime model it leverages. For example, if an IEPD package is updated from version 4.0 to 4.1 (a minor change), all associated documents will be updated to 4.1 to match. This ensures that users can easily find the correct documentation for any NIEM-M artifact.

3. Change Management Process

Change Requests for the Maritime artifacts will be implemented incrementally. Initially, change requests will be implemented in the EIEM and released (this could be a major, minor, or micro change). The Maritime COI will use the updated EIEM to ensure the validity of the implemented change. After the EIEM changes have been successfully used, the DESC will determine if it's a candidate for promotion to the Maritime Domain Model. This allows the Maritime COI to use and endorse the changes prior to changing the Maritime Domain Model. Upon validation of the change request implementation in the EIEM, the change will be promoted to the Domain for inclusion in the next NIEM Release. The Maritime change management process flow is captured below in Figure 2.

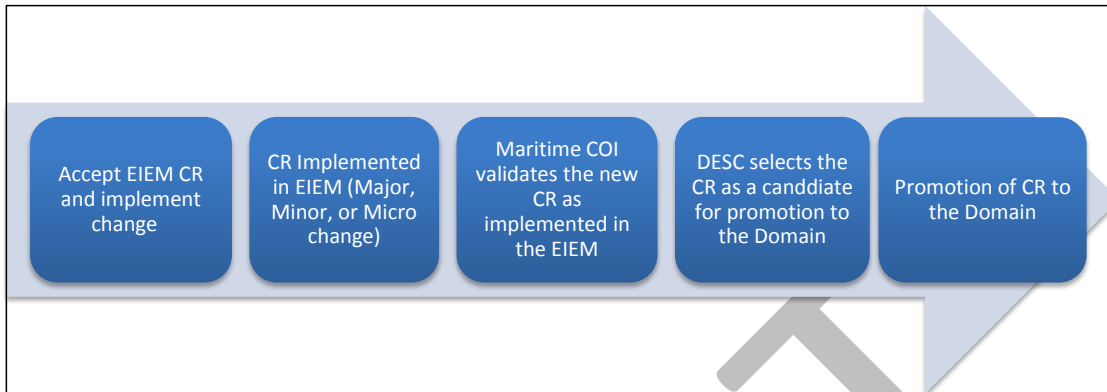


Figure 2. Change Management Process

4. Repositories

The latest version of the NIEM-M IEPDs and EIEM are posted at the following locations:

1. *NIEM IEPD Clearinghouse* – Provides information on a variety of IEPDs that have been submitted by individuals and organizations, which have implemented the NIEM.
2. *MISE website* (<https://mise.mda.gov>) – Provides the National Maritime Domain Awareness (MDA) Architecture Plan and associated resources for successful implementation of the Maritime Information Sharing Environment (MISE).
3. *Data Services Environment (DSE) website* (<https://metadata.ces.mil/dse/>) - Provides a one stop access to DoD data source directories to improve, search, access, consistency, and integration of data services as well as to increase collaboration amongst data producers and consumers.

The latest version of NIEM-M documents are posted on the MISE website.